



LECTURE ANNOUNCEMENT
UNIVERSAL ALGEBRA
368.203

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PREREQUISITES:

Basic knowledge in abstract algebra, e.g. acquired in one of the following courses: Linear algebra, Introduction to algebra and discrete mathematics, Algebra for Informatics.

CONTENT:

Universal algebra is a discipline that studies all algebraic structures (rings, groups, semigroups, . . .) in one common framework and focusses on questions that are best treated in this generality. Among the classic results are the completeness of the equational calculus (Birkhoff 1935) or Birkhoff's subdirect representation theorem.

This lecture will explain these classic results. In the second part of the lecture we will address one recent application of universal algebraic methods to the classification of constraint satisfaction problems.

METHOD:

Along with the lecture, there will be exercises to help students master the material. These exercises are not compulsory, but solutions will contribute positively to the final grade. The language of instruction will be English or German according to the preferences of the participants.

START:

Monday, October 5, 8:30-10:00 in S2 054.

COURSE MATERIAL:

- (1) S. Burris and H. P. Sankappanavar. *A course in universal algebra*. Springer New York Heidelberg Berlin, 1981. Available at <https://www.math.uwaterloo.ca/~snburris/htdocs/ualg.html>
- (2) Miklós Maróti, *Lecture notes on the constraint satisfaction problem*, 50th Summer School on Algebra and Ordered Sets, Nový Smokovec, Slovakia, 2012.